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Hcf lcm worksheets with answers

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Quick lessons on HCF (Highest Common Factor) and LCM (Least Common Multiple) are provided with step-by-step solutions to help students gain complete knowledge of these concepts. Practice worksheets on HCF and LCM will aid in learning different methods for finding the highest common factor, least common multiple, and other related concepts. Solving LCM and HCF questions available in the worksheet can enrich subject knowledge and improve math skills in a fun and interactive manner. You can download, print, and share this handy worksheet on H.C.F and L.C.M for free to help students learn how to find LCM and HCF using various methods like cake/ladder method, division method, listing multiples, factorization, prime factorization, etc. Example 1: Find the highest common factors of the following numbers by factorization? (i) 28, 36, 12 (ii) 120, 68 (iii) 124, 78, 116 (iv) 1228, 386 Solution: (i) 28, 36, 12 The highest common factor is 4. (ii) 120, 68 The highest common factor is 2. (iii) 124, 78, 116 The highest common factor is 2. (iv) 1228, 386 The highest common factor is 2. Example 2: Find the HCF of the following numbers using long division method? (i) 45, 120 (ii) 150, 180 (iii) 25, 34, 18 (iv) 100, 30 Solution: (i) 15 is the HCF of 45 and 120. (ii) 30 is the HCF of 150 and 180. (iii) To find the HCF of 25, 34, 18 using long division method. (iv) To find the HCF of 100 and 30 using long division method. 1. The method for finding the highest common factor (HCF) is as follows: First, take the largest number and divide it into the smallest number. Then, use the result as a new divisor and repeat this process until you get zero. 2. Use a different approach to calculate the LCM by visualizing a cake with different sized slices for each number. The total amount of cake is divided equally among all the slices, which gives us the LCM. 3. Apply the same method used in the first example, but now we're looking for the least common multiple (LCM) of 18, 24, and 32 instead of finding the HCF. 4. Use a similar approach to find the LCM of 30, 48, and 55 by dividing each number into slices that can fit together perfectly without any gaps or overlaps. 5. Apply the same logic as before but now looking for an LCM rather than just HCF; here our goal will be different – finding least common multiple instead! 6. Repeat steps similar those in previous examples where we looked at cake/ladder visualizations - this time calculating lcm(24,34,54). 7. If you know that the lcm of two numbers is 462 and their product equals 924, find out their hcf by dividing the known value (product) into smaller pieces called "pieces" since there were only two original items being considered here now - those same old math problems come back again! 8. Given hcf equals four whereas product also known as x*y equals twenty-six forty-four then figure out what exactly LCM stands for – Least Common Multiple after all! 9. Knowing HCF and LCM means knowing one of the two numbers is forty; let’s find other using those values since math works both ways! Here, the highest common factor is 10. Hence, HCF is 10. LCM of 27 and 33 using prime factorization method: 27 = 3 × 3 × 3 33 = 3 × 11 LCM = 33 × 11 = 297 LCM of 15 and 25 using listing multiples method: Multiples of 15 are 15, 30, 45, 60, 75, 90, 105 Multiples of 25 are 25, 50, 75, 100, 125 Hence, LCM of 15 and 25 is 75. LCM of 13 and 15 using division table method: LCM = 3 × 5 × 13 = 195 Together, they toll at intervals of 2, 4, 6, 8, 10, and 12 seconds respectively. In 30 minutes, how many times do they toll together? 1. The HCF (48, 64) = 16. 2. Find the factors of 18, 24, and 30 using a factor tree method. The common factors are 1, 2, 3, and 6. Therefore, HCF (18, 24, 30) = 6. 3. Write the prime factors of 84 and 182 as follows: 84 = 2 · 7 · 2 · 3; 182 = 2 · 7 · 13. The common prime factors are 2 and 7, so HCF (84, 182) = 14. 4. When 62, 78, and 109 are divided by the greatest number, leaving remainders 2, 3, and 4 respectively, the greatest number is the HCF of 60, 75, and 105. The product of common factors of 60, 75, and 105 is = 3 · 5 = 15, so HCF (60, 75, 105) = 15. 5. In two numbers 0.045 and 0.075, find equal number of digits after the decimal point. To get rid of the decimal point, multiply each number by 1000. Find the greatest common factor of 45 and 75 using prime factorization method: HCF (45, 75) = 15. 6. There is no common divisor for 7 and 12, so they are relatively prime. The least common multiple of two numbers that are relatively prime is the product of those two numbers. Therefore, LCM (7, 12) = 7 · 12 = 84. 7. Write the prime factors of 18 and 24: 18 = 2 · 3 · 3; 24 = 2 · 2 · 2 · 3. The least common multiple is LCM (18, 24) = 2 · 2 · 2 · 3 · 3 = 72. Let's find the product of all prime factors: 7 · 2 · 3 = 429. Since the two numbers are in the ratio 7 : 9, we can assume them as 7x and 9x. Find the least common multiple (LCM) of 7x and 9x. LCM(7x, 9x) = x · 7 · 3 · 3 = 63x, but it's given that the LCM is 378, so 63x = 378 and x = 6. Substitute x in 7x and 9x: 7x = 7(6) = 429 and 9x = 9(6) = 54. Therefore, the two numbers are 42 and 54. Using the formula to find the LCM of fractions: LCM(numerators)/HCF(denominators), we can solve problems 10, 11, and 12. In problem 13, we know that the product of the two numbers is equal to the LCM multiplied by HCF. Let x be the other number; then, 108x = 432 · 36 and x = (432 · 36)/108 = 144, so the other number is 144. Similarly, in problem 12, we can find that the other number is 77. In problem 14, we need to find the LCM of multiple numbers. The given two quantities 120 and 180 can be divided by 10, 20, ..., exactly, so their HCF is 60 liters. Divide the toll by two to get fifteen instances, excluding the initial one. Please send your comments to v4formath@gmail.com; we value your input.